Celanese
The chemistry inside innovation™

Crastin® CE2055 NC010

THERMOPLASTIC POLYESTER RESIN

Common features of Crastin® thermoplastic polyester resin include mechanical and physical properties such as stiffness and toughness, heat resistance, friction and wear resistance, excellent surface finishes and good colourability. Crastin® thermoplastic polyester resin has excellent electrical insulation characteristics and high arc-resistant grades are available. Many flame retardant grades have UL recognition (class V-0). Crastin® thermoplastic polyester resin typically has high chemical and heat ageing resistance.

The good melt stability of Crastin® thermoplastic polyester resin normally enables the recycling of properly handled production waste.
If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-24 kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Crastin® thermoplastic polyester resin typically is used in demanding applications in the electronics, electrical, automotive, mechanical engineering, chemical, domestic appliances and sporting goods industry.

Crastin® CE2055 NC010 is an unreinforced, low viscosity polybutylene terephthalate resin for injection moulding.

Product information

Resin Identification	PBT	ISO 1043
Part Marking Code	>PBT<	ISO 11469

Rheological properties

Melt volume-flow rate	43	cm^3/10min	ISO 1133
Temperature	250	°C	
Load	2.16	kg	
Moulding shrinkage, parallel	1.7	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.7	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	2600	MPa	ISO 527-1/-2
Yield stress, 50mm/min	60	MPa	ISO 527-1/-2
Yield strain, 50mm/min	10	%	ISO 527-1/-2
Nominal strain at break	13	%	ISO 527-1/-2
Strain at break, 50mm/min	30	%	ISO 527-1/-2
Flexural Strength	82	MPa	ISO 178
Charpy notched impact strength, 23°C	3.5	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	3.9	kJ/m^2	ISO 180/1A
Poisson's ratio	0.38		

Thermal properties

Melting temperature, 10°C/min	225	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	55	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	55	°C	ISO 75-1/-2
Temp. of deflection under load, 1.8 MPa, annealed	58	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	150	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa, annealed	183	°C	ISO 75-1/-2

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Vicat softening temperature, 50 °C/h, 50N	175	°C	ISO 306

Flammability

FMVSS Class	SE/B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	14	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Comparative tracking index	600[A]		IEC 60112

[A]: Assessed

Other properties

Humidity absorption, 2mm	0.2	%	Sim. to ISO 62
Water absorption, 2mm	0.4	%	Sim. to ISO 62
Density	1310	kg/m³	ISO 1183

Injection

Drying Recommended	yes		
Drying Temperature	120	°C	
Drying Time, Dehumidified Dryer	2 - 4	h	
Processing Moisture Content	≤0.04	%	
Melt Temperature Optimum	250	°C	Internal
Min. melt temperature	240	°C	
Max. melt temperature	260	°C	
Mold Temperature Optimum	80	°C	
Min. mould temperature	30	°C	
Max. mould temperature	130	°C	
Hold pressure range	≥60	MPa	
Hold pressure time	4	s/mm	
Back pressure	As low as possible	MPa	
Ejection temperature	170	°C	Internal

Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23 °C
- ✔ Citric Acid solution (10% by mass), 23 °C
- ✔ Lactic Acid (10% by mass), 23 °C
- ✘ Hydrochloric Acid (36% by mass), 23 °C
- ✘ Nitric Acid (40% by mass), 23 °C
- ✘ Sulfuric Acid (38% by mass), 23 °C
- ✘ Sulfuric Acid (5% by mass), 23 °C
- ✘ Chromic Acid solution (40% by mass), 23 °C

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Bases
- ✗ Sodium Hydroxide solution (35% by mass), 23°C
- ✓ Sodium Hydroxide solution (1% by mass), 23°C
- ✓ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols
- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

Hydrocarbons
- ✓ n-Hexane, 23°C
- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

Ketones
- ✓ Acetone, 23°C

Ethers
- ✓ Diethyl ether, 23°C

Mineral oils
- ✓ SAE 10W40 multigrade motor oil, 23°C
- ✗ SAE 10W40 multigrade motor oil, 130°C
- ✗ SAE 80/90 hypoid-gear oil, 130°C
- ✓ Insulating Oil, 23°C

Standard Fuels
- ✗ ISO 1817 Liquid 1 - E5, 60°C
- ✗ ISO 1817 Liquid 2 - M15E4, 60°C
- ✗ ISO 1817 Liquid 3 - M3E7, 60°C
- ✗ ISO 1817 Liquid 4 - M15, 60°C
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✓ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✗ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

Salt solutions
- ✓ Sodium Chloride solution (10% by mass), 23°C
- ✓ Sodium Hypochlorite solution (10% by mass), 23°C
- ✓ Sodium Carbonate solution (20% by mass), 23°C
- ✓ Sodium Carbonate solution (2% by mass), 23°C
- ✓ Zinc Chloride solution (50% by mass), 23°C

Other
- ✓ Ethyl Acetate, 23°C
- ✗ Hydrogen peroxide, 23°C
- ✗ DOT No. 4 Brake fluid, 130°C
- ✗ Ethylene Glycol (50% by mass) in water, 108°C

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- ✔ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23 °C
- ✔ 50% Oleic acid + 50% Olive Oil, 23 °C
- ✔ Water, 23 °C
- ✘ Water, 90 °C
- ✔ Phenol solution (5% by mass), 23 °C

Symbols used:

✔ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✘ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).